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10/089,766	08/14/2002	Eric J. Detwiler	DP-301411	2851

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EXAMINER

TUNG, TA HSUNG

ART UNIT

PAPER NUMBER

1753

DATE MAILED: 07/07/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/089,766

Applicant(s)

DETWILER

BZHL

Examiner

T. TUNG

Group Art Unit

1753

Paper No. 5

—The MAILING DATE of this communication appears on the cover sheet beneath the correspondence address—

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, such period shall, by default, expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- ☐ Responsive to communication(s) filed on _____
- ☐ This action is **FINAL**.
- ☐ Since this application is in condition for allowance except for formal matters, **prosecution as to the merits is closed** in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

- ☒ Claim(s) 1-20 is/are pending in the application.
- ☐ Of the above claim(s) _____ is/are withdrawn from consideration.
- ☐ Claim(s) _____ is/are allowed.
- ☒ Claim(s) 1-20 is/are rejected.
- ☐ Claim(s) _____ is/are objected to.
- ☐ Claim(s) _____ are subject to restriction or election requirement

Application Papers

- ☐ The proposed drawing correction, filed on _____ is ☐ approved ☐ disapproved.
- ☐ The drawing(s) filed on _____ is/are objected to by the Examiner
- ☐ The specification is objected to by the Examiner.
- ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119 (a)-(d)

- ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119 (a)-(d).
- ☐ All ☐ Some* ☐ None of the:
 - ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____
 - ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a))

*Certified copies not received: _____

Attachment(s)

- ☐ Information Disclosure Statement(s), PTO-1449, Paper No(s). _____
- ☒ Notice of Reference(s) Cited, PTO-892
- ☐ Notice of Draftsperson's Patent Drawing Review, PTO-948
- ☐ Interview Summary, PTO-413
- ☐ Notice of Informal Patent Application, PTO-152
- ☐ Other _____

Office Action Summary

Art Unit: 1102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-3, 6, 10, 11 are rejected under 35 U.S.C. 102(b) as being anticipated by Sasayama et al 4,900,425.

Sasayama discloses a sensor comprising a reference electrode 12 with a portion of a surface exposed to a reference gas channel 32. The exposed portion is less than about 50% of the entire area of the reference electrode surface. There is another electrode 19 with a surface area smaller than that of the reference electrode. See figure 8; col. 5, line 50 to col. 6, line 13.

Claims 1-3, 6 are rejected under 35 U.S.C. 102(b) as being anticipated by Mase et al 4,655,901.

Mase discloses a sensor comprising a reference electrode 4 with a portion of a surface exposed to a reference gas channel 7, 7'. The exposed portion is less than about 50% of the entire area of the reference electrode surface. See figure 4; col. 4, line 20 to col. 5, line 55.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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Claims 4, 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sasayama et al or Mase et al.

These claims differ by calling for the exposed portion to be less than 25% and less than 15% of the entire surface area.

The size of the reference electrode's portion being exposed to the reference gas channel is a matter of routine design choice in the absence of unexpected result. No unexpected result whatsoever is seen to be associated with these percentages of the exposed portion.

Claims 7-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sasayama et al or Mase et al in view of Yamada et al 5,976,350 or Kato et al 6,287,439.

These claims differ by calling for the sensor to have an impedance below 4000 ohms.

Yamada (col. 8, lines 55-57) or Kato (col. 4, lines 51-56) discloses a conventional sensor to have an impedance below 4000 ohms. It would have been obvious for Sasayama or Mase to adopt the sensor impedance of the secondary references, since the incorporation of known features from analogous prior art is within the skill of the art in the absence of unexpected result.

Claimsc 12-16, 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sasayama et al or Mase et al in view of Schneider et al 5,529,677 or Wiedenmann et al 5,169,512.

These claims differ by calling for the formation of the reference gas channel by providing on the reference electrode a fugitive material, which is burned out during sintering to form the gas channel.

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Schneider (col. 4, line 26 to col. 5, line 30) or Wiedenmann (col. 6, lines 44-56; col. 7, line 60 to col. 8, line 40) discloses burning out a fugitive material by sintering to form a gas channel. It would have been obvious for Sasayama or Mase to adopt this technique of Schneider or Wiedenmann to form its referenec gas channel, since this technique is not labor intensive and allows the channel to be formed in situ during the assembling of the sensor to reduce manufacturing cost. Of course the fugitive material should be applied to less than 100% of the reference electrode surface, because only a fraction of the reference electrode surface faces the reference gas channel.

Claims 17-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sasayama etal or Mase etal in view of Schneider etal or Wiedenmann etal and Yamada etal or Kato etal.

These claims further differ by calling for the sensor to have an impedance of less than 4000 ohms. As discussed before, that is rendered obvious by Yamada or Kato.

Wang etal 5,304,294, Mase etal 4,657,659 and DE 19835766 were cited in applicant's PCT application. DE (figure 3) shows a reference eletrode with only a fraction of its surface exposed to a reference gas channel. However, the publication date Feb. 17, 2000 of DE is subsequent to applicant's foreign priority date Oct. 20, 1999.

The examiner can be reached at 703-308-3329. His supervisor Nam Nguyen can be reached at 703-308-3322. Any general inquiry should be directed to the receptionist at 703-308-0661. A fax number for TC 1700 is 703-872-9310.

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Ta Tung

Primary Examine

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